REMARKS

The Office Action of November 19, 2003 has been carefully considered.

Objection has been raised to the claims based on the use of the term "annealing." In light of this objection, the claims have been amended to use the term "artificially aging" which is considered to be a better translation of the original French term "revenu."

Claims 1-12 have been rejected under 35 USC 103 over Chakrabarti et al.

Chakrabarti et al discloses series 7xxx aluminum alloys where Mg$\leq$(Cu+0.3), and which are aged to result in compressive yield strengths which are higher than those previously known in the art.

Table 3 sets forth a comparison of properties in the L-direction as a function of aging time, which is 6, 8 or 11 hours at 320°F (160°C). The compressive yield strength clearly decreases as a function of aging time.

The composition of Chakarabarti overlaps the claimed composition only when Mg is between 1.8 and 1.9%, and none of the examples of Chakrabarti et al fall within this range; see [0073], [0075], [0076], Table 4 and Table 11. In the examples of Chakrabarti et al, Mg is not higher than about 1.5%.

As is apparent from [0070], Chakrabarti et al is concerned with optimizing tensile yield strength (TYS) and fracture toughness; the alloys of the invention achieve a balance of those properties, as shown in Figure 3.

In Figure 9, tensile yield strength is plotted against electrical conductivity, which is the usual way of monitoring peak yield strength. Thus, in industrial production at a given aging temperature, the conductivity for peak TYS is determined, and this conductivity is used for quality control

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purposes.

The claimed invention is based upon maximizing compression yield strength (CYS) as opposed to tensile yield strength (TYS). The conditions for maximizing CYS are different from those for maximizing TYS, as can be seen by comparing the lower two curves in Figure 4 of the present application. From these curves it can be seen that peak tensile yield strength is obtained at the shortest aging time, about 50 hours, whereas the peak compression yield strength is obtained after a longer aging time, about 100-200 hours.

With further reference to Chakrabarti et al Table 3, the minimum aging time of 6 hours at 160°C corresponds to 258 hours at 120°C, not even taking into account Chakrabarti's initial aging step of 6 hours at 121°C, as disclosed in [0087] and Table 5. Thus, Chakrabarti et al has missed the CYS peak, so as to not compromise fracture toughness.

In order to better recite this CYS peak in the claims, claim 1 has been amended to recite that the aging time is equivalent to abput 100 to 230 hours at 120°C, corresponding to line AD of Figure 2. Claim 7 has been amended to incorporate the recitation of Figure 8, in which the time and temperature of aging falls within ABCD of Figure 2.

From [0020] of Chakrabarti et al, it appears that the preferred aging time of the second step, contrary to the allegation in the Office Action, exceeds the claimed time equivalent. Thus, at 320°F (160°C), the minimum aging time is 6 hours, and as noted above, this corresponds to 258 hours at 120°C. While lower temperatures are disclosed, these would require longer times. Applicant believes that Chakrabarti et al does not specifically disclose aging at 305°F for 6 hours as cited in the Office Action.

Withdrawal of this rejection is requested.

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In view of the foregoing amendments and remarks, Applicant submits that the present application is now in condition for allowance. An early allowance of the application with amended claims is earnestly solicited.

Respectfully submitted,

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